WITK

The Spark Gap

November 1980

Book VI Vol XI

Official Journal of the Wellesley Amateur Radio Society

MESSAGE FAIR

The Natick Mall message fair is now just over a month away and so naturally planning has begun. This is our biggest event of the year, taking a full week of work when setting up and taking down are included, and is also our biggest attention getter. Not only do we make ham radio visible to thousands of visitors to the mall but we also recruit new members for the club, for the Novice classes, and for Amateur Radio in general.

Your ideas on the running of the message fair are needed as always. We began last year to expand beyond the message fair format of previous years by including a variety of displays on various apsects of Amateur Radio. Any new ideas for displays are welcome and need to be started on right away to be ready in time for December 8th through the 14th. Any input? □

BANQUET!

Our first annual banquet has now been scheduled and will be held on Thursday, December 18th, at 7:00 pm. The place: Valle's Steak House, 300 Boylston Street, Newton (Route 9 east, about four miles inside Route 128). Details of the evening will be more completely detailed in next month's Spark Gap, but you can sign up now. Menu selections and prices can be found on the sign-up sheet located at the end of this issue. This is meant to be a family event, so bring everyone! □

A.R.R.L. Convention

The ARRL New England Convention was held at the Sheraton Boxborough on the weekend of October 4 and 5. Over 5000 people attended and took part in the displays by 53 dealers, many hours of talks and other presentations, large outdoor flea market, and a variety of contests. Several manufacturers introduced new products and all the many products that had previously been only photos in magazines were there to play with.

The flea market provided many good bargains (and some not so good ones) but there were only two dealers present, so there were not many deals in new equipment.

Talks on many subjects such as reception of satellite television, computers, SSTV, OSCAR. Such traditional ham subjects as DXing, traffic handling, VHFing, and so on were also well covered.

Many Wellesley club members took part in the action and several had rooms at the hotel which provided a meeting place at the end of the day. A good time was had by all, and if you missed it, you really missed out. □

Dues Dues Dues...

If you haven't yet paid your dues, now is the time. Dues for the 1980/81 club year will remain at $8.00 per person, and $2.00 for additional family members who do not receive their own Spark Gap. Please get your dues into Jim Hatherley, WA1TBY, 46 Hobson Street, Brighton, Mass. 02135, or bring them along to a club meeting. □

MEETINGS THIS MONTH:

November 6, 1980 at 7:30 pm
November 20, 1980 at 7:30 pm
Intermediate Bldg., Wellesley Hills, Mass.

REPEATER SIGNAL REPORTS

by Erik J. Thoresen, K1OGF

Signal reports on repeaters seem to by very confusing and they are usually inaccurate. The reason for this confusion is a basic misunderstanding of how a repeater system works.

I made a few mistakes when I first used a repeater and still do unless I stop to think of the system as a whole. To help in your understanding of the common repeater system, read up on it in any of the many texts available.

I will not go into the system here in any detail, except to say that there are two distinct RF paths involved; one from you to the repeater, and one from the other station to the repeater.

If you are a mobile station, you can never tell if you are making the repeater, or if the station you are talking to is not making the repeater. The reason being, the "flakiness" or dead spots can be in either of the RF paths.

There is only one way to tell which path is "flaky" (unless you are right under the repeater), get the opinion of a third or even a fourth station. The "flakiness" is reciprocal as far as transmitting and receiving is concerned in any one path.

To give an example of what I mean, I will relate to you the following incident.

One evening after signing off with a station who was "flaky" into the repeater, I listened to the same station tell a third station he was "flaky" into the machine. This was definitely a mistake, as I could copy the third station solid, and the second station was still"flaky" to me.

To conclude this oration, think of the two paths involved in a repeater QSO, that receiving and transmitting is reciprocal in any one of the paths as far as dead spots go, and ask a third station to give an opinion of the signal quality.

OFFICIAL BULLETIN

Nr 95, dated September 19, 1980:

Effective September 28, 1980, the FCC will change its telegraphy testing procedure for all of its field offices. Code tests administered by FCC will be of the completion type, requiring the applicant to fill in the blanks. The multiple choice code test will be discontinued. All telegraphy tests will consist of a typical QSO followed by 10 questions with 80% the passing grade.

hr REPORT

Recent pass rate figures for Amateur exams from two FCC Field Offices, though a limited sample, are quite interesting. While over two-thirds taking the combined Elements 2 and 3 exam--Technician/General without previous Novice--passed; only 43% of those who already had a Novice license did so. Less than 25% of the Advanced Class applicants made the grade, bu a third of those going for Extra in Chicage passed--while a whopping 73% (eight out of 11) Denver Extra Class applicants made it.

Part of these unusual results may be due to the introduction of new exams this spring. It's also a common practice to take an exam for "practice" before being fully prepared for it.

hr Report, September 26, 1980□

Auctions/Flea Markets

November 9: The Framingham Amateur Radio Association fall flea market, at the drill shed, located in the rear of the Framingham Police station, at 81 Union Avenue, Framingham. Set-up start is 9:00 am, doors open at 10:00. Admission is $1.00 per person, tables are $6.00 per six feet in advance, or $7.50 at the door if any are left. Talk-in is on 75/15 or 52 direct. For reservations, send check to Framingham Amateur Radio Association, P.O. Box 3005, Framingham, Mass. 01701. □

The Spark Gap

Official Journal of the Wellesley Amateur Radio Society

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323-5029

THE "SPARK GAP" IS A MONTHLY PUBLICATION OF THE WELLESLEY AMATEUR RADIO SOCIETY. ITS PRIMARY PURPOSE IS TO KEEP ITS MEMBERS ABREAST OF CURRENT HAPPENINGS, F.C.C. RULES & REGULATIONS CHANGES, AND TO LIST EQUIPMENT OFFERED FOR SALE OR TRADE BY MEMBERS. MEMBERS ARE ENCOURAGED TO CONTRIBUTE TO THE "SPARK GAP" AND MAY SENT THEIR ARTICLES (TYPEWRITTEN IF POSSIBLE) TO THE EDITOR-IN-CHIEF OR TO THE CLUB ADDRESS.

THE WELLESLEY AMATEUR RADIO SOCIETY IS A NON-PROFIT ORGANIZATION DEDICATED TO THE PROMOTION OF AMATEUR RADIO THROUGH INSTRUCTION, FELLOWSHIP, DEMONSTRATION, AND ENCOURAGEMENT OF PARTICIPATION. ANNUAL MEMBERSHIP IN THE SOCIETY IS $8. THE CLUB YEAR RUNS SEPTEMBER 1 TO AUGUST 31. AMATEUR NOVICE AND GENERAL CLASSES ARE CONDUCTED REGULARLY AT NO COST. TO ENROLL IN A CLASS, OR GAIN INFORMATION ABOUT THE SOCIETY IN GENERAL, WRITE:

THE WELLESLEY AMATEUR RADIO SOCIETY
324 WASHINGTON STREET
WELLESLEY HILLS, MASS. 02181

Minutes

Meeting of October 2, 1980:

The meeting was opened at 7:44 pm by President David Curry, K1TK.

The secretary's and treasurer's reports were read.

A report on the Boston 350 Parade communications activities was given.

A reminder about the tour of the Framingham C.D. communications facilities was given.

The annual Simulated Emergency Test to be held the weekend of October 18th was brought up and a sign-up sheet was passed.

The annual Wellesley Veterans parade to be held October 19th was brought up but since the town's plans for our participation are not yet known, nothing was formally decided.

Concerning the progress of the Natick Mall message fair, it was announced that the mall people had been sent an initial contact.

The annual QSO Party and the future of the W1TKZ club station were discussed. It was decided that it would be worth completing an HF station at the club and that the antennas should be put back up. November 8th was suggested as a date for a work party.

The status of the repeater was reported. The new receive site is now operational and has increased coverage greatly. It is not currently on emergency power as a battery is needed for backup.

The banquet was discussed and it was decided that Thursday, December 18 would be a good date for it if a site can be secured.

The meeting closed at 8:39 pm. □

OFFICIAL BULLETIN

Nr 99, dated September 30, 1980:

The Federal Communications Commission has proposed eliminating the commercial First Class Radiotelephone License in General Docket 20817. According to the Commission, many persons believe that because commercial broadcast station licensees are ultimately responsible for the technical performance of their stations, such stations should not be required to employ technicians who have been examined and licensed by the Commission. Rather, they should be able to employ any qualified person. Comments are due November 14, 1980, with reply comments due December 15, 1980.

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Nr 100, dated September 30, 1980:

To encourage more repeater groups to submit information for the Repeater Log in QST, form CD-258 has been created by the ARRL Communications Department. This streamlined card can be used to report significant emergency and public safety activities provided via repeaters, for ultimate recognition in the Public Service column in QST. Enclose an S.A.S.E. with your request for a supply fo CD-258. □

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Congratulations to W1HHR who was recently re-elected ARRL New England division director and to K1PAD who was newly elected to the position of vice-director.

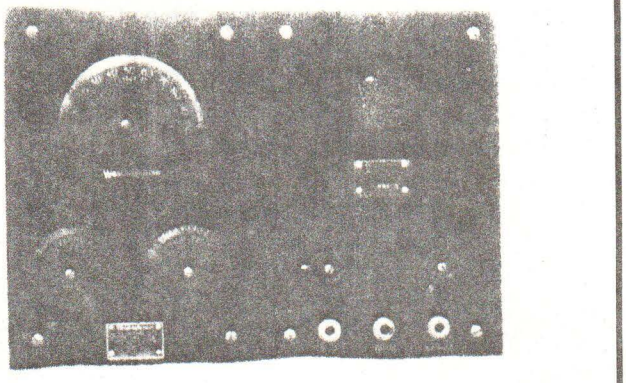
hr Report, October 3, 1980□

OLDE TIME RADIO

by Jim Idelson, K1IR

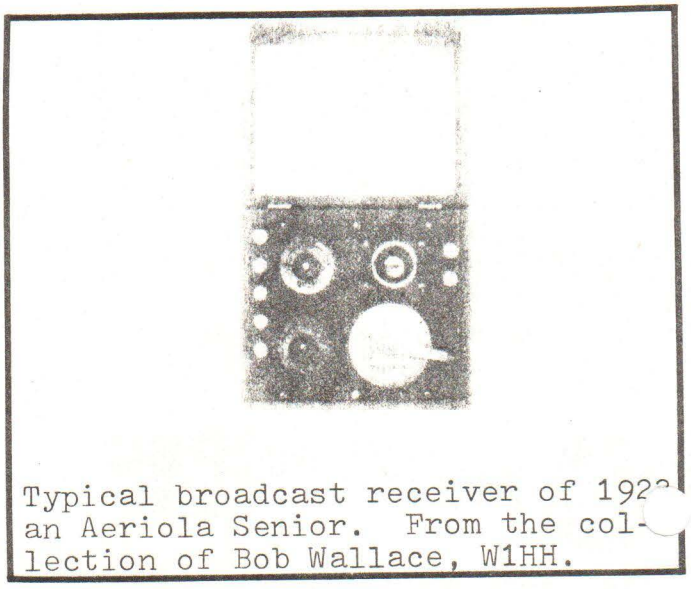
Part Six

In late 1921 the radio boom was set into high gear. Orders for broadcasting equipment were piling up on the desks of manufacturers of such apparatus at a tremendous rate. The reason for this was unclear. No one, with the exception of equipment manufacturers had devised a reasonable way to capitalize on the new mania. It must have been the simple magnetism of the "voices through the air" idea which made a broadcast station so desirable. The Department of Commerce printed Radio Service bulletins which listed stations in operation each month. The boom is apparent from their listing of new stations during each one month period which grew from two in August 1921 to 99 in May 1922.



Typical broadcast receiver of 1922 a Westinghouse R/C. From the collection of Bob Wallace, W1HH.

The first issue of Radio Broadcasting, May, 1922, had an editorial which expounded profusely on the industry's expansion: "The rate of increase in the number of people who spend at least a part of their evening in listening in is almost incomprehensible. To those who have recently tried to purchase receiving equipment, some idea of the increase has undoubtedly occurred, as they stood perhaps in the fourth or fifth row at the radio counter waiting their turn only to be told when they finally reached the counter that they might place an order and it would be filled when possible...The movement is probably not even yet at its height. It is still growing in some kind of geometric progression... It seems quite likely that before the movement has reached its height, before the market for receiving apparatus becomes approximately saturated, there will be at least five million receiving sets in this country."



Typical broadcast receiver of 192? an Aeriola Senior. From the collection of Bob Wallace, W1HH.

The stations were all operating on 360 meters (833 kHz). This was the only frequency allocated for broadcasting. In 1922 stations were interfering with one another enough so that they had to arrange operating schedules which would not upset the others. Sometimes they found it quite difficult to satisfy everyone. For the listener the radio dial was becoming a difficult thing to use. It was very upsetting to listen to the heterodynes of several stations operating on top of one another and then when it was quiet and only one station was heard, the choppy effect of low and high powered stations switching on and off was cause for disconsolation.

On February 27, 1922, Herbert Hoover, Secretary of Commerce, convened the first Washington Radio Conference to discuss the matter of regulation

with the officials of the major powers in the radio industry.

Hoover was unclear of his power to egulate broadcasting under the Radio ct of 1912, which related only to two-way communications by radio. Legislation was drafted to give him power to license stations, but he had no power to refuse a license application from anyone.

Certain groups saw the advantages of radio more than others. At educational institutions, stations were put on the air as quickly as possible. Educators saw benefit in on-campus radio stations because of the possibilities for extended teaching and to encourage students to learn about the new medium. Some universities gave courses by way of radio lectures. At the end of 1922 there were seventy-four broadcast licenses issued to colleges and universities.

Newspapers were joining in, too. At the year's end there were sixty-nine licenses issued to newspapers.

A radio station was an attention-getter, a device to draw crowds. It was a novelty item for those who could ffort to put one on the air. In the spring of 1922 an attempt was made by the Department of Commerce to sort out the massive confusion on 360 meters. A second frequency, at 400 meters, was allocated for broadcasting. The requirements for stations to be permitted to move to 400 were a power between 500 and 1000 watts and they could not use phonograph records as a program source. The regulation was intended to separate the large stations with a wide range and diversified programming to a frequency where their benefits could be enjoyed by a much larger listening audience.

As 1923 rolled in, 690 stations had been licensed. Their goals were not to accept direct income from broadcasting. They reaped the benefits of their efforts indirectly. Some came in the form of increased sales, others came as prestige or increased enrollments. The costs were never assessed; 1922 was the year in which it just didn't matter.

(This attitude didn't last long, as radio broadcasting became increasingly commercialized as will be examined next month.) □

CHUCKLE KORNER

STATION EVALUATING: A SELF TEST

--TACR Bulletin (Temple ARC) via ARNS

It's often quite revealing to test and evaluate your capabilities as an Amateur Radio operator. Here's a quiz to help you do that, based on your equipment configuration.

2-KW PLUS A HUGE BEAM

Leaps tall buildings with a single bound, is more powerful than a locomotive, is faster than a speeding bullet, walks on water and gives policy to God.

1-KW WITH A TRI-BANDER

Leaps short buildings with a single bound, is more powerful than a switch engine, is just as fast as a speeding bullet, and walks on water if the sea is calm.

BAREFOOT WITH A BEAM

Leaps short buildings with a running start and favorable winds, is almost as powerful as a switch engine, is faster than a speeding "BB", walks on water in indoor swimming pools, and talks with God if the Sepcial Request Sheet is approved.

BAREFOOT WITH A VERTICAL

Barely clears quonset huts, loses tug-of-war with a locomotive, can fire a speeding bullet, swims well, and is occasionally addressed by God.

QRPer WITH A LONG WIRE

Runs into buildings headfirst, recognized locomotives two out of three times, can sometimes handle a "BB" gun without inflicting self-injury, dog paddles, and talks to the walls.

QRPer WITH A 36-INCH METAL RULER

Falls over doorsteps while trying to enter buildings, says "Look at the Choo-Choo," wets himself with a water pistol, plays in mud puddles, and mumbles to himself.

NET CONTROL STATIONS

Lifts buildings and walks under, kicks locomotives of the tracks, catches speeding bullets in his teeth and eats them, freezes water with a single glance because...(he thinks)... he is God. □

Boston 350 Parade

by Jim Hatherley, WA1TBY

As Boston was closing its 350th birthday celebration, one of the events scheduled was a parade, and they wanted it to be something special, a big one. The Massachusetts Army National Guard was given the assignment to organize this parade. As the time neared the parade date, the number of units entered had swollen to huge proportions.

Realizing the need for dependable communications, so vital to the success of such a venture, the Guard called on the Amateur fraternity for help. The Wellesley Amateur Radio Society responded to this call. After several meetings with the Guard's higher echelon, a communications plan was devised by Dick Paret, WA1ZLQ with Jim Oliveto, WB1DSF who is also in the National Guard. The plan was designed to cover all the needs of the parade. Two meters would be the band and two repeaters, the 146.04/64 machine in Waltham and the 144.83/145.43 machine in Belmont, were used in addition to a direct frequency, 146.52. (We graciously thank the owners and users of both repeaters for their cooperation.)

In the assembly area, much work was necessary to muster each marching unit and get them to their assigned places in the parade. Being so large a parade, we had to have three different assembly areas, one for the marching units, one for the floats and one for the horse divisions. From these three assembly areas, it was vital to have each unit ready for the march at the appointed time and communications proved to be a blessing in moving up the units to the tri-junction of Boylston Street, Hereford Street and Dalton Street where they moved into the line of march from that point. In order for this to happen, the hams in those areas were working their butts off keeping track of which divisions were next in line from their respective assembly areas. At one point considerable search was made to find a mayor of a visiting town so he could enter the parade on schedule. After a while it was accomplished and to the credit of the hams and their National Guard officers, they didn't miss a unit.

Along the parade route we had still another area to be covered which was vital to keep the parade moving. Nels Anderson, K1UR, was assigned to this officer and gave a good account because if the parade was halted or slowed down along the route, it meant considerable delays in the assembly areas. This officer in charge was right on the ball and covered a lot of ground doing his job.

At the end of the parade we had still another critical area which was the dispersal area where finishing marchers had to be loaded aboard their transportation and moved out of the area to make room for the next finishing units. Again, this meant a lot of running around by our group to locate the proper bus or truck which would contain each finishing group. Again, they worked in clock-like precision and did another magnificent job. Another problem which came up was one of those unforseen things and being a warm day made the difference and this was that the marchers began to pass out from heat prostration and needed ambulances ordered into the area as well as a water buffalo, a water carrying vehicle of the National Guard, to bring relief to the marchers.

All units from the assembly area to the dispersal area were coordinated at the command post of Colonel Dolan through the Belmont repeater and the assembly areas used the Waltham repeater and dispersal used 52 direct. It all went smoothly for the most part and the National Guard, a little apprehensive at first as to the capabilities of the ham groups, were delighted to see things go as they did and another feather went into the hat of Amateur Radio.

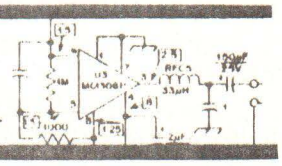
We are extremely proud of our guys as they did one heck of a job and a hearty WELL DONE doesn't seem appropriate enough to laud them on their dedication and ability during the long ten to twelve hour day. We, the Wellesley Amateur Radio Society, wish to thank you one and all for your help. It was greatly appreciated and showed that the true spirit of Amateur Radio is alive and doing well. Thank you.

Amateurs who gave of their time and talents, (and I hope I don't overlook anyone), were N1ADY, KA1AHD, N2AWG, N1AWX, KA1BTV, WB1BUM, KA1CGP, KA1COA, K1DNZ, WB1DXT, WB1EET, WB1EPH, WD9ERI, WB1EZT, WA1GBN, K1HBJ, K9HI, AK1I, WA1IGL, K1OGF, K1OIQ, K1PAD, WA1PQY, WA1QQV, AJ1R, WA1TBY, K1TK, WA1TUX, WA1UGJ, K1UR, WA1VSY, WA1YHV, WA1YOJ, W1YSW, AB1Z, WA1ZLQ, WA1ZVA.

We would also like to extend our congratulations to the Massachusetts National Guard who did an outstanding job of their own and wish to publicly thank them for allowing us to offer our help.

And, finally, an individual WELL DONE to Dick Paret, WA1ZLQ, who put in a lot of hours planning, telephoning both hams and Guard personnel to make sure that everything would run as a well oiled machine should and deserves all the credit in the world for coordinating such an effort. 73 to all. □

Tek Tok



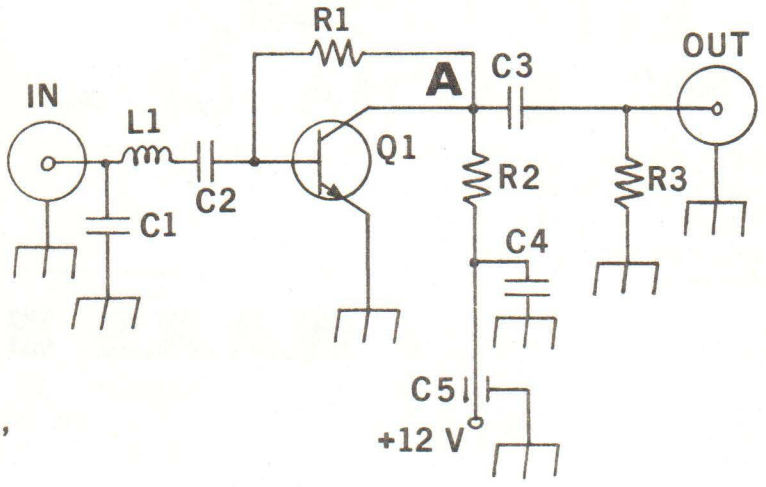
by Nels Anderson, K1UR

If your station needs a simply built preamp for 28 MHz for OSCAR reception, to help out an undersensitive converter or for any other reason, this circuit will do the trick.

The design is by Henry Cross, W1OOP, and has been reproduced by Wellesley club members K1OGF and K1UR and has proved to work well during a "trial by fire" during the September VHF QSO Party when the preamp was used in conjunction with a 432 MHz receive converter. You will note that there are no tuned circuits in the design, thus once the parts are soldered together, you're done! This also means that the circuit is broadbanded and so will cover a range much greater than just 10 meters; in fact the preamp has been found to have gain as high as 2 meters although this will not be as good as the gain on 10. Because the design is broadbanded, a low pass filter has been added at the front end. This is designed especially for using the preamp with a 432 MHz converter and keeps the converter local oscillator from getting through. This portion of the circuit (the inductor L1 and 39 pf capacitor C1) can be eliminated or changed for other uses of the preamp.

The only portion of the circuit that may require adjustment is the resister R1. Try starting with a value of 36k and check the voltage at point A (transistor collector). This voltage should be between 4 and 8 volts for the best noise figure.

Other than the transistor, the parts are easily obtained and may well be in your parts collection. The transistor can be purchased for about a dollar. For best results, the circuit should be well shielded (mounted in a minibox) and should be powered through a feed-through capacitor. This will help keep outside noises outside and improve the noise figure. □



28 MHz Preamp

PARTS LIST:

L1: .15 to .22 uH (12 turns #30 wire on a T-12-10 toroid). See text.
Q1: 2N5109, 2N3866, or SD1021.
C1: 39 pf ceramic. Optional, see text.
C2: .001 uf ceramic.
C3: .001 uf ceramic.
C4: .01 uf ceramic.
C5: .001 uf feed-through.
R1: 36k. See text.
R2: 1k to 1.2k.
R3: 50 to 100Ω.

ANNOUNCEMENT

At the November 20th meeting we will be having as speakers two people from Star Case, the pay TV service broadcast over channel 68 in Boston. Fred Horowitz, general manager and Mark Welton, marketing, will discuss technical matters concerning pay TV, address some of the legal issues, and generally describe their service. They will also have handouts available. The meeting starts at 7:30 pm. □

Auctions / Flea Markets

November 22: 1200 Radio Club/Waltham Repeater Association auction, held at Honeywell building, 300 Concord Road, Billerica (just of Route 3). Check-in starts at 10:00, auction at 11:00. Commission 15%, $1.00 minimum, $30.00 maximum. Many parts also available. □

ELECTRONICS EXCHANGE

For sale: Heathkit electronic keyer, current model HD-1410 with built in iambic paddles. $40.00. Contact Mike Adlerstein, K1FB, at 235-1130. □

OFFICERS

PRESIDENT:
David Curry, K1TK, 237-2450
VICE PRESIDENT:
Erik J. Thoresen, K1OGF, 653-1216
CORRESPONDING SECRETARY:
Bill Hanlon, N1ADY, 384-8056
RECORDING SECRETARY:
Nels Anderson, K1UR, 323-5029
TREASURER:
Jim Hatherley, WA1TBY, 254-6042
OPERATING ACTIVITIES:
Glenn Brodie, N1ACN, 443-8677
FUND RAISING:
Kevin Kelly, WA1YHV, 242-0341
EDUCATION CHAIRMAN:
Bill Downing, WA1PQY, 655-3040
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David Curry, K1TK, 756-5325
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C.J. McDonald, WB1BUM, 332-6091
STATION MANAGER:
Erik J. Thoresen, K1OGF, 653-1216
TRUSTEE:
Lud Fasolino, K1LF, 237-0316
REPEATER COMMITTEE:
David Curry, K1TK, 237-2450
Bill Downing, WA1PQY, 655-3040
Scott Nacey, WA1YOJ, 235-1599
Dick Paret, WA1ZLQ, 762-5074

W.A.R.S. BANQUET

December 18 at 7:00 p.m.
Valles Steak House
Route 9, Newton, Mass.

Name _____ Call _____

Enter number of each dinner in boxes:
(Price includes tax and tip.)

☐ Roast Large Cut Prime Ribs of Beef @ $11.50 each

☐ Lobster a la Newburg en casserole @ $10.00 each

Send reservations and payment to:

Nels J. Anderson, K1UR
32 Westgate Road, Apt. 6
Chestnut Hill, Mass. 02167

Make checks payable to "Wellesley Amateur Radio Society"

The Spark Gap

WELLESLEY AMATEUR RADIO SOCIETY

324 Washington Street
Wellesley Hills, Massachusetts 02181

FIRST CLASS MAIL

Speaker November 22 (see p. 8).

Sign up now for our first annual banquet (form on p. 8).